**Syllabus**

Power System Design

Course Code- 031814

**1. Per unit system representation**, reactance diagram, impedance diagram. **Lecture : 5**

**2. Load flow Analysis**; Load flow problem, ybus, Formulation of problem, solution technique using Gauss seidel method **Lecture : 7**

**3. Symmetrical short circuits Analysis**; Short circuit of a Synchronous machine on no load, Short circuit of loaded synchronous machine, Thevenin's equivalent circuit approach for short circuit analysis **Lecture : 7**

**4. Symmetrical component**; Transformation, phase shift in star-delta transformer, sequence Impedance and sequence network of transmission line, Synchronous machine, Transformer and power system. **Lecture : 8**

**5. Unsymmetrical Short Circuits**; Symmetrical component analysis of unsymmetrical short Circuits, single line to ground fault, Double line to ground fault and line to line fault.

**Lecture : 7**

**6. Power system stability problem**, Swing equation, System response to small disturbances, Power angle equation and diagram **Lecture : 6**

**7. Transient stability**, Equal area criterion, Measures for improving transient stability **Lecture : 5**